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Amendments to the Claims:

Please replace all prior versions, and listings of claims in the application with the following listing of claims.

Listing of claims

Claims 1 and 2 (cancelled)

Claim 3 (currently amended): A mobile station comprising:

- a first antenna;
- a first radio frequency processing circuit receiving and processing signals from said first antenna;
- a second antenna;
- a second radio frequency processing circuit receiving and processing signals from said second antenna; and
- a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said control signal generated by said base band processing circuit is controlled by a control signal from a base station with which said mobile station is in communication.

Claim 4 (original): A mobile station in accordance with claim 3 wherein the base station will increase or decrease its output power to said mobile station after transmitting said control signal until a sufficient signal quality of the communication link.

Claim 5 (currently amended): A mobile station comprising: a first antenna;

- a first radio frequency processing circuit receiving and processing signals from said first antenna;
- a second antenna;

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a second radio frequency processing circuit receiving and processing signals from said second antenna; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said mobile station informs a base station of its deactivation of diversity so that the base station will adjust its output power until a sufficient signal quality is achieved in accordance with the non-diversity mode.

Claim 6 (currently amended): A mobile station comprising:

a first antenna;

a first radio frequency processing circuit receiving and processing signals from said first antenna, wherein the first radio frequency processing circuit comprises active circuitry;

a second antenna;

a second radio frequency processing circuit receiving and processing signals from said second antenna, wherein the second radio frequency processing circuit comprises active circuitry; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and

said determination as to whether diversity is appropriate is based on a signal quality of demodulated processed radio frequency signals.

Claim 7 (currently amended): A mobile station comprising:

a first antenna;

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a first radio frequency processing circuit receiving and processing signals from said first antenna, wherein the first radio frequency processing circuit comprises active circuitry;

a second antenna;

a second radio frequency processing circuit receiving and processing signals from said second antenna, wherein the second radio frequency processing circuit comprises active circuitry; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and

said determination as to whether diversity is appropriate is based on a level comparison diversity technique of demodulated processed radio frequency signals.

Claim 8 (currently amended): A mobile station comprising:

a first antenna;

a first radio frequency processing circuit receiving and processing signals from said first antenna, wherein the first radio frequency processing circuit comprises active circuitry;

a second antenna;

a second radio frequency processing circuit receiving and processing signals from said second antenna, wherein the second radio frequency processing circuit comprises active circuitry; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and

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said determination as to whether diversity is appropriate is based on a likelihood comparison technique of demodulated processed radio frequency signals.

Claim 9 (currently amended): A mobile station comprising:

a first antenna;

a first radio frequency processing circuit receiving and processing signals from said first antenna, wherein the first radio frequency processing circuit comprises active circuitry;

a second antenna;

a second radio frequency processing circuit receiving and processing signals from said second antenna, wherein the second radio frequency processing circuit comprises active circuitry; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and

said determination as to whether diversity is appropriate is based on a measure of bit error rate of demodulated processed radio frequency signals.

Claim 10 (currently amended): A mobile station comprising:

a first antenna;

a first radio frequency processing circuit receiving and processing signals from said first antenna, wherein the first radio frequency processing circuit comprises active circuitry;

a second antenna;

a second radio frequency processing circuit receiving and processing signals from said second antenna, wherein the second radio frequency processing circuit comprises active circuitry; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing

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circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and

said determination as to whether diversity is appropriate is based on a measure of frame error rate of demodulated processed radio frequency signals.

Claim 11 (currently amended): A mobile station comprising:

a first antenna;

a first radio frequency processing circuit receiving and processing signals from said first antenna, wherein the first radio frequency processing circuit comprises active circuitry;

a second antenna;

a second radio frequency processing circuit receiving and processing signals from said second antenna, wherein the second radio frequency processing circuit comprises active circuitry; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and

said determination as to whether diversity is appropriate is based on a measure of a signal to interference ratio of demodulated processed radio frequency signals.

Claim 12 (currently amended): A mobile station comprising:

a first antenna;

a first radio frequency processing circuit receiving and processing signals from said first antenna, wherein the first radio frequency processing circuit comprises active circuitry;

a second antenna;

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a second radio frequency processing circuit receiving and processing signals from said second antenna, wherein the second radio frequency processing circuit comprises active circuitry; and

a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and

said determination as to whether diversity is appropriate is based on a measure of the number of re-transmissions required based on demodulated processed radio frequency signals.

Claim 13 (canceled)

Claim 14 (currently amended): A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;

processing radio signals from said first antenna in a first radio frequency processing circuit;

receiving radio signals in a second antenna;

processing radio signals from the ~~first~~ second antenna in a second radio frequency processing circuit;

receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;

determining whether diversity is appropriate; and

providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on said determination as to whether diversity is appropriate,

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further comprising controlling the generation by said base band processing circuit of said control signal by a control signal from a base station with which said mobile station is in communication.

Claim 15 (original): A method in accordance with claim 14 further comprising adjusting an output power of the base station to said mobile station after transmitting said control signal until a sufficient signal quality of the communication link.

Claim 16 (currently amended): A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;

processing radio signals from said first antenna in a first radio frequency processing circuit;

receiving radio signals in a second antenna;

processing radio signals from the ~~first~~ second antenna in a second radio frequency processing circuit;

receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;

determining whether diversity is appropriate; and

providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on said determination as to whether diversity is appropriate, further comprising said mobile station informing a base station of its deactivation of diversity so that the base station will adjust its output power until a sufficient signal quality is achieved in accordance with the non-diversity mode.

Claim 17 (currently amended): A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;

processing radio signals from said first antenna in a first radio frequency processing circuit, wherein the first radio frequency processing circuit comprises active circuitry;

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receiving radio signals in a second antenna;

processing radio signals from the second antenna in a second radio frequency processing circuit, wherein the second radio frequency processing circuit comprises active circuitry;

receiving and combining processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;

determining whether diversity is appropriate based on demodulated processed radio frequency signals; and

providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on said determination as to whether diversity is appropriate,

wherein said determination as to whether diversity is appropriate includes measuring a signal quality of a demodulated signal.

Claim 18 (currently amended): A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;

processing radio signals from said first antenna in a first radio frequency processing circuit, wherein the first radio frequency processing circuit comprises active circuitry;

receiving radio signals in a second antenna;

processing radio signals from the second antenna in a second radio frequency processing circuit, wherein the second radio frequency processing circuit comprises active circuitry;

receiving and combining processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;

determining whether diversity is appropriate based on demodulated processed radio frequency signals; and

providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on said determination as to whether diversity is appropriate,

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wherein said determination as to whether diversity is appropriate includes employing a level comparison diversity technique.

Claim 19 (currently amended): A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;

processing radio signals from said first antenna in a first radio frequency processing circuit, wherein the first radio frequency processing circuit comprises active circuitry;

receiving radio signals in a second antenna;

processing radio signals from the second antenna in a second radio frequency processing circuit, wherein the second radio frequency processing circuit comprises active circuitry;

receiving and combining processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;

determining whether diversity is appropriate based on demodulated processed radio frequency signals; and

providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate active circuitry in said second radio frequency processing circuit based on said determination as to whether diversity is appropriate,

wherein said determination as to whether diversity is appropriate includes employing a likelihood comparison technique.

Claim 20 (canceled)